Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	
Advanced Telecommunications	)	
Capability to All Americans in a Reasonable	)	CC Docket No. 98-146
and Timely Fashion, and Possible Steps	)	
to Accelerate Such Deployment	)	
Pursuant to Section 706 of the	)	
Telecommunications Act of 1996	)	

COMMENTS OF SKYBRIDGE

SKYBRIDGE L.L.C.

Phillip L. Spector
Jeffrey H. Olson
Patrick S. Campbell
Paul, Weiss, Rifkind, Wharton & Garrison
1615 L Street, N.W., Suite 1300
Washington, D.C. 20036
Telephone: (202) 223-7300
Facsimile: (202) 223-7420

Its Attorneys

September 8, 1998

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SUMMARY

SkyBridge L.L.C. ("SkyBridge") hereby submits comments in response to the Commission's Notice of Inquiry ("NOI") in the above-captioned matter. The NOI sought comments on how the FCC can best effectuate the mandate in Section 706 of the Telecommunications Act of 1996 that it "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans." SkyBridge submits that global satellite networks and technology, such as that being developed by SkyBridge, will provide a cost-effective and expeditious means of delivering broadband communications to all Americans.

In the NOI, the Commission identified two major obstacles posed by existing telecommunications networks: first, existing telephone lines do not provide advanced telecommunications capability for the "last-mile" to the homes of residential customers; and second, existing broadband networks do not extend to certain rural and other high-cost areas. Given the huge costs associated with bringing fiber optic and/or terrestrial wireless systems to all homes -- particularly those in rural or hard-to-reach areas -- these problems are not likely to be solved by terrestrial technology in the near future.

On the other hand, the global broadband satellite system being implemented by SkyBridge will, upon its commencement of service in 2001, overcome both the "last-mile" and coverage shortcomings of existing networks, and provide advanced telecommunications capability to all Americans, whether in urban, rural, or extremely remote areas. Moreover, because the costs of delivering service via the SkyBridge network will not be materially

affected by the user's location (unlike terrestrial technologies), the SkyBridge system will create instant broadband bandwidth for everyone on the planet from the outset -- at the same time and on an equal basis in terms of quality and speed. The SkyBridge network will thus create an advanced broadband telecommunications blanket linking every point in the United States with every other point on the face of the globe.

SkyBridge has sought authorization from the FCC to deploy its global broadband network and begin competing with other carriers in the race to deliver advanced telecommunications capability to all Americans. While SkyBridge's application has been on public notice for over a year, and the pleading cycle with respect to that application has long since expired, the Commission has not granted SkyBridge's request for authorization. In order to fulfill Congress' mandate that the FCC take regulatory action to hasten the deployment of systems offering the capabilities that will be offered by SkyBridge, the Commission should now grant SkyBridge's application.

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COMMENTS OF SKYBRIDGE

SkyBridge L.L.C. ("SkyBridge"), by its attorneys, hereby submits these comments in response to the Notice of Inquiry ("NOI") released by the Federal Communications Commission (the "FCC" or "Commission") in the above-captioned proceeding.[1/] In the NOI, the Commission requested comment on how it can best effectuate the mandate established by Congress in Section 706 of the Telecommunications Act of 1996; that Section requires the Commission to take certain actions to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans."[2/]

1/ FCC 98-187, CC Docket No. 98-146 (Aug. 7, 1998).

2/ Pub. L. 104-104, Title VII, §706, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. §157. Section 706 requires the Commission "to establish a national policy framework designed to accelerate rapidly the private sector deployment of advanced telecommunications." S. Rep. 104-23 at 27, March 30, 1995. According to that Section, "'advanced telecommunications capability' is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." 47 U.S.C. §157 note.

I. INTRODUCTION

In seeking comment on how it can best hasten the deployment of advanced telecommunications capability in the United States, the Commission posed three major questions:[3/]

(1) What companies will soon deploy advanced telecommunications services that will "reach schools and classrooms, people in rural areas and inner cities, and other customers who are traditionally thought to be less profitable?"

(2) How can the Commission determine whether such advanced capability is being deployed in a "reasonable and timely fashion" to all Americans?

(3) What are some of the actions that the Commission can take to speed the deployment of advanced capability, particularly to "remov[e] barriers to infrastructure investment and . . . promot[e] competition in the telecommunications marketplace?"

SkyBridge submits that the answers to these important questions can best be found through the development and promotion of satellite technology, such as that currently being developed by SkyBridge.

SkyBridge is a U.S.-based partnership of several major players in the satellite and communications industries, including Alcatel and Loral.[4/] As the Commission is aware, SkyBridge filed an application in February 1997[5/] seeking authorization to establish a new

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[3/] NOI at ¶¶ 8-10.

[4/] Other strategic partners of SkyBridge include Mitsubishi Electric, Sharp, Toshiba, Spar, Aerospatiale and CNES.

[5/] See Application of SkyBridge for Authority to Launch and Operate a Global Network of Low Earth Orbit Communications Satellites Providing Broadband Services in the Fixed Satellite Service, File No. 48-SAT-P/LA-97, filed Feb. 28, 1997; Amendment, File No. 89-SAT-AMEND-97, filed July 3, 1997; Further Amendment, filed June 30, 1998.

broadband nongeostationary orbit ("NGSO") fixed satellite service ("FSS") system that, upon commencing service in 2001, would immediately make available advanced telecommunications capability to every American. Additionally, on July 3, 1997, SkyBridge filed a Petition for Rulemaking to permit such NGSO FSS operations in the Ku-band.[6/] On July 28, 1997, the Commission released the SkyBridge rulemaking petition for public comment,[7/] and on August 28, 1997, the Commission determined that, upon initial review, the SkyBridge application was acceptable for filing, and released the application for public comment.[8/] Oppositions and comments were filed by various parties regarding both the application and petition. The pleading cycles on both filings have long since expired, and these requests have for some time been ripe for grant.

It should be noted that SkyBridge has recently addressed, before the Commission and Congress, issues similar to those raised in the NOI. In response to a speech delivered by FCC Chairman Kennard earlier this year on the deployment of broadband infrastructure in the United States, Pascale Sourisse, the President and CEO of SkyBridge, wrote a letter to the Chairman describing SkyBridge as a company that, "at its

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6/ See SkyBridge's Petition for Rulemaking: Amendment of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the 10.7- 2.7 GHz, 12.75- 13. 25 GHz, 13.75-14.5 GHz, and 17.3-17.8 GHz Bands, and to Establish Technical Rules Governing NGSO FSS Operations in these Bands, RM No. 9147, filed July 3, 1998.

7/ See Public Notice, Report No. 2213 (July 28, 1997).

8/ See Public Notice, Report No. SPB-98 (Aug. 28, 1997).

core and by design -- is a 'last mile' broadband access solution."[9/] In addition, David Finkelstein, senior vice president of SkyBridge, in a recent statement delivered to a subcommittee of the U.S. Senate contemplating bandwidth issues, established that new satellite technologies such as SkyBridge can provide: (1) the availability of broadband telecommunications to literally everyone; (2) the opportunity to create true competition and universal service in local telecommunications; and (3) increased services through efficient use of the scarce radio frequency spectrum.[10/] The Sourisse letter and the Finkelstein statement are attached to, and by this reference made a part of, these comments.

In these comments, SkyBridge will establish that broadband satellite systems will provide an expeditious and cost-effective means of delivering advanced telecommunications services to all Americans -- whether in urban, suburban, rural or extremely remote areas -- at the same time and on an equal basis. In order to fulfill its Congressional mandate, therefore, the Commission should take action to facilitate the development and deployment of such systems.

9/ Letter from Pascale Sourisse to the Hon. William E. Kennard (June 30, 1998).

10/ *Bandwidth Issues: Hearing Before the Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation* (Apr. 22, 1998) (Statement of David Finkelstein).

II. DISCUSSION

A. SkyBridge is Preparing to Deploy Advanced Telecommunications Capability to All Americans.

In posing the question of what entities will have the ability to make broadband telecommunications capacity available to all Americans, the Commission identified two sets of challenges: bandwidth and coverage. First, with respect to bandwidth, the Commission noted that the copper wire infrastructure that ends in the homes of Americans -- the "last mile" -- "is not broad or fast enough to be called advanced."[11/] Chairman Kennard, in his recent speech, likened this problem to attempting to fill a backyard swimming pool with a garden hose.[12/] Despite the fact that "[t]here's plenty of water in the city reservoir to fill the pool, and there are huge water mains that can deliver water down the street," the pool is filled very slowly because "the hose is too small compared to the amount of water you are trying to pump through it."[13/]

The second obstacle identified by the Commission relates to geographic coverage: the terrestrial, wire-based broadband "backbone"-- the network of reservoirs and water mains, so to speak -- either does not serve numerous geographic areas, or serves those

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11/ NOI at ¶ 3.

12/ A Broad(band) Vision for America, Remarks by William E. Kennard, Chairman, Federal Communications Commission, to the Federal Communications Bar Association (June 24, 1998) ("Kennard 6/24/98 Speech").

13/ Id.

areas inadequately.[14] This inequitable distribution of service may be traced largely to the substantial, at times prohibitive, cost of wiring homes in remote, less-populated, and mountainous areas. For these reasons, the entity "able and motivated to deploy advanced services soon, especially to residential customers," must be able to provide bandwidth that is sufficient to handle advanced telecommunications applications, especially in the so-called "last mile" to the home, and must be able to extend such telecommunications services to all Americans, including those in rural and high-cost areas. In other words, as stated by Chairman Kennard, while the technology for advanced communications is here, "[w]e just need to get it to America's homes."[15]

The Commission suggested in the NOI that using new software or technology to squeeze additional bandwidth out of traditional telephone lines may be the answer to defeating the "last-mile" problem, and delivering high-bandwidth services inside homes.[16] There is, however, a far better solution. Satellite technologies, such as that being implemented by SkyBridge, can overcome the existing technical barriers to the provision of advanced telecommunications capability, and thereby address the "last-mile" and the "high-cost area" obstacles, more quickly and effectively than traditional terrestrial networks. Upon its deployment, the SkyBridge network will instantaneously create advanced

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[14] NOI at ¶ 3

[15] Kennard 6/24/98 Speech.

[16] NOI at ¶¶ 19-20.

telecommunication capability for all "schools and classrooms, people in rural areas and inner cities, and other customers who are traditionally thought to be less profitable."[17/]

SkyBridge will offer interactive broadband and narrowband telecommunications services worldwide via an 80-satellite Ku-band NGSO system, providing fiber optic-like connectivity to nearly all parts of the globe, and linking users to local servers as well as terrestrial broadband and narrowband networks. The broadband services SkyBridge will offer match the definition of "advanced telecommunications capability" set forth in Section 706, and include high-speed Internet access and on-line services, video-conferencing and video-telephony, multimedia entertainment services, telecommuting, LAN interconnection, and infrastructure links for telephony, wireless local loops and mobile communication. In addition, the system will provide narrowband services for voice, video-conferencing, data transmission and backup longhaul connection. The SkyBridge system is scheduled to initiate service in 2001.

SkyBridge will thus offer a solution to the "last-mile" problem by transmitting high-bandwidth data from its satellites directly to user terminals located inside homes, schools, and businesses. The SkyBridge network will also address the "high-cost-area" problem by creating access to the information superhighway for rural, high-cost, and sparsely populated areas that are not presently connected to broadband networks. Americans in every part of the country will be able to receive the advantages of services such as telemedicine, teletraining, and access to essentially unlimited information databases, thus improving the

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[17/] See NOI at ¶ 8.

country's productivity and educational, social, and health care services. These applications will be available in "remote elementary and secondary schools and classrooms such as in Native American areas or the Alaskan Bush,"[18] at the same speed and quality, and at the same time, as they are available in Chicago or Los Angeles.

SkyBridge's technology will also address the Commission's "interest[] in the amount and adequacy of backbone between the United States and other countries."[19] As the Commission recognized, Americans may desire advanced services that begin or end in another country. And while, as the Commission stated, submarine cables are being constructed, or could be constructed, on certain U.S.-foreign country routes,[20] terrestrial cables will never form a blanket broadband network connecting all points in the world. SkyBridge's satellite technology can do so, however, by instantaneously creating a broadband link between any point in the United States and practically every other point on the face of the globe. Instead of creating communications channels between "select" routes, the SkyBridge network will be capable of creating links between every nation on earth. And, as in the United States, the SkyBridge system will face no "last-mile" or coverage shortcoming in any foreign country.

The SkyBridge satellite system will feature many additional advantages in comparison to existing technologies. For example, whereas plain old telephone service

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[18] See NOI at ¶ 46.

[19] Id. at ¶ 35.

[20] Id.

("POTS") and ISDN have data rates limited to 64 kilobits per second and 144 kilobits per second, respectively, SkyBridge's target application will feature information speeds from 2 to 10 megabits per second (some 30-70 times faster). In addition, the SkyBridge system will be far more cost-effective than landline networks in lower population density regions because, as a satellite-based service, its costs are not heavily dependent on population densities or on the quality of existing infrastructure.[21/] Thus, while landline technologies such as the Digital Subscriber Line ("xDSL"), Hybrid Fiber Coax ("HFC"), and Fiber to the Curb ("FTTC") have data rate capabilities and offer latency performances similar to that of the SkyBridge system, SkyBridge can satisfy lower population density markets more quickly and at lower cost.[22/]

Facilitation of the deployment of satellite systems such as SkyBridge is thus the most effective and advantageous means of effectuating Congress's mandate that the FCC encourage the availability to all Americans of advanced telecommunications infrastructure.

B. SkyBridge Can Deploy Advanced Telecommunications Capability in a "Reasonable and Timely Fashion."

The second major question posed by the Commission related to ways in which the FCC can ensure the deployment of advanced telecommunications services in a reasonable

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21/ See id. at ¶ 46 & n. 46, quoting Merrill Lynch, Global Satellite Marketplace 98, 120-21 ("satellites are the least cost solution for serving regions with low subscriber density") (Apr. 22, 1998).

22/ SkyBridge also offers a more cost-effective solution in non-urban markets than terrestrial wireless systems such as Local Multipoint Distribution Service ("LMDS"), due to the short pathways and line-of-sight problems inherent with terrestrial Ka-band technology.

and timely manner.[23/] Congress and the Commission are clearly aware of the need to provide all Americans with equal and affordable access to advanced telecommunications capability as soon as possible, both to maintain the global competitiveness of the United States and to ensure equal access to all Americans, regardless of location.

It is open to serious question whether terrestrial wireline or wireless broadband networks will ever be deployed to all Americans and be made available in homes across America, and it is certain that such capability will not be made available during the next decade. The costs of installing the necessary fiber-optic infrastructure into all American homes and establishing advanced networks in rural and other high-cost areas are staggering, with no assurance of adequate demand to justify the costs.

A global satellite network, such as that proposed by SkyBridge, can overcome difficulties arising from terrain and distance without incurring additional infrastructure costs; the cost of delivering service is not materially affected by the user's location. Unlike the terrestrial networks being developed and improved today, satellite technology can create instant broadband infrastructure for everyone on the planet from the outset. Once the SkyBridge system is in orbit, it will provide immediate global coverage into all homes, schools and businesses, and will provide advanced services that are immediately accessible in both a remote area with one user and an urban metropolis with a million users.

The SkyBridge system also lowers costs by using a combination of transmission means, including satellite links for local access (the "last mile") and existing

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23/ NOI at ¶ 9.

terrestrial broadband networks for long-distance connections. SkyBridge's use of the Ku-band for this service further reduces costs, as it relies on already proven technology, in a frequency band that is far more immune to, e.g., rain-fade than Ka-band satellite systems. Once the SkyBridge system is in place in 2001, the user need invest only in a small earth station to receive immediate broadband service, no matter how isolated the location; equipment costs should be comparable to a DBS subscriber's hardware investment. Systems such as SkyBridge will thus be made available to all Americans "on a reasonable and timely basis," in accordance with Congress' mandate in Section 706 of the 1996 Act.

C. The Commission Can Remove Barriers to Infrastructure Investment and Promote Competition by Facilitating the Deployment of the SkyBridge System.

The third major inquiry posed by the Commission in the NOI was a request for advice on steps that the FCC can take to speed the advent of the availability of advanced telecommunications capability for all Americans. SkyBridge submits that the Commission can do so by promoting the development and deployment of systems such as SkyBridge. As demonstrated above, satellite technology offers the most cost-effective solution to the "last-mile" and "high-cost-area" problems, and can provide that solution within a reasonable time frame. Regulatory uncertainty with respect to the status of license applications and other relevant FCC proceedings in connection with the deployment of such systems may, however, hinder the development of such networks by making it difficult for innovative companies such as SkyBridge to attract sufficient capital to establish their networks.

Helping to speed the launching of the SkyBridge system will also increase competition in the industry for advanced telecommunications services. In the NOI, the

Commission, recognizing that there are numerous companies promising to provide advanced telecommunications capability and that these companies may produce a significant degree of competition, asked how it could create incentives for such competitive entry.[24/] SkyBridge submits that the best way to promote this form of competition is to ensure that regulatory approvals sought by entities such as SkyBridge are processed expeditiously.[25/] While it helps for the Commission to consider whether to eliminate price cap regulation, impose regulatory forbearance, or require structural separation for local exchange carriers with respect to advanced services,[26/] the Commission cannot lose sight of the fact that some potential players have not yet even been cleared to enter the competition. Thus, in addition to improving the rules of the game for existing players, it is important for the Commission to clear the way for others to join the race to bring advanced telecommunications capability to all Americans, and to do so quickly, so as to allow the new entrants to compete effectively with the incumbents.

24/ Id. at ¶ 56.

25/ Section 7(b) of the Communications Act of 1934 requires the Commission to "determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed." 47 U.S.C. § 157(b). SkyBridge's application has been on file with the Commission for well over a year, and was accepted for filing a little over a year ago. Under Section 7 of the Act, the Commission should already have taken final action on SkyBridge's application.

26/ See Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order and Notice of Proposed Rulemaking, FCC 98-188 (Aug. 7, 1998).

III. CONCLUSION

By supporting the development and market entry of new satellite-based technologies such as the SkyBridge system, the Commission will spur competition in the broadband industry, and can thereby meet the challenge of accelerating the deployment of advanced telecommunications capability to all Americans on an equal basis. Such capabilities will undoubtedly prove beneficial to citizens across the country, and demonstrate the United States' global leadership in the information revolution.

Respectfully submitted,

SKYBRIDGE L.L.C.

By: _____

Phillip L. Spector
Jeffrey H. Olson
Patrick S. Campbell
Paul, Weiss, Rifkind, Wharton & Garrison
1615 L Street, N.W., Suite 1300
Washington, D.C. 20036
Telephone: (202) 223-7300
Facsimile: (202) 223-7420

Its Attorneys

September 8, 1998

Attachment A

SkyBridge

an Alcatel company

June 30, 1998

The Hon. William E. Kennard
Chairman, Federal Communications Commission
1919 M Street, N.W.
Washington, D.C.

Dear Mr. Chairman:

Last week, you spoke on the future of the communications revolution. In your speech, you issued a visionary challenge. You spoke of "bringing the best of the Information Age into every home in America." You identified the potential for "new horizons for entertainment, information, and communications services for all Americans." And you acknowledged the tremendous benefits in jobs and economic output to be gained from "e-commerce"--doing business over the Internet--from $20 billion this year to $350 billion four years from now.

But you were not only visionary. You were also realistic. You recognized that a huge obstacle must be overcome before that great vision can be made a reality. On the one hand, the Internet has "plenty of capacity to pump data all over the country very quickly." On the other hand, when the data "reaches that last mile, the copper phone line that runs into [the] house is a lot like [a] garden hose. It can't handle the amount . . . that needs to be pumped through to fill up [the] computer screen quickly."

In short, the vast majority of Americans are not yet seeing the potential benefits of the Internet in their homes.

Mr. Chairman, my company, SkyBridge, agrees with you wholeheartedly and applauds you for your vision. You were right on target in identifying the problem; but you mentioned only a part of the solution. Telephone companies and cable companies, you said, should provide broadband access to the home by replacing their old copper phone lines with lines that can transmit data digitally "at lightning speed."

Installing new high-speed digital lines, however, will take time, and these lines may never reach rural areas. It will take many years for the telephone and cable companies to bring all of the benefits of the Internet to all American homes. But there is another technology with great potential for high-speed, low-cost, local and world-wide communications: the satellite technology called SkyBridge.

SkyBridge

an Alcatel company

My company -- at its core and by design -- is a "last mile" broadband access solution. Built around a constellation of low earth orbit satellites and gateway earth stations, SkyBridge will by 2001 provide the infrastructure for a full range of broadband services, including Internet access and high-speed data communications. It will serve local areas according to their needs and preferences and will complement local networks, with all switching and routing controlled and customized by the gateway stations. And SkyBridge will be inexpensive, because it uses a combination of state of the art technology for local access, and the existing terrestrial fiber network -- the "huge water mains" to which you referred -- for long-haul connections.

Perhaps most importantly, Mr. Chairman, SkyBridge offers competition -- another way, besides telephone and cable lines, to "bring consumers more services, better quality, and the lowest prices." We also offer the potential for universal service; from day one of our system operations, we will be able to provide the rancher in Montana with the same quality of high-speed Internet access, at the same price, as we will provide to the banker in Chicago.

With all of its advantages, SkyBridge is an integral part of any solution to the broadband problem. Mr. Chairman, in fulfilling your visionary goal of bringing the benefits of the Internet to all Americans, let SkyBridge help you.

Respectfully yours,

Pascale Sourisse
President and CEO

Attachment B

STATEMENT OF

DAVID FINKELSTEIN

Senior Vice President

SkyBridge Limited Partnership

Hearing on Bandwidth Issues

Before the

Subcommittee on Communications
Committee on Commerce, Science and Transportation

U.S. Senate

April 22, 1998

Thank you for granting me this opportunity to speak to you today. My name is David Finkelstein, and I am Senior Vice President of SkyBridge, which is a U.S. company proposing to bring interactive broadband telecommunications to the entire globe. SkyBridge plans to establish a network of 64 satellites in low-earth orbit to provide fiber optic-like connectivity to almost all areas on earth; we will provide Internet access, multimedia services, videoconferencing, and other advanced communications applications. SkyBridge has obtained financial and strategic backing from several major players in the satellite and communications industries, including Alcatel, Loral, Toshiba, Sharp and Mitsubishi.

But I am not really here to talk about SkyBridge. I am here to make you aware of the tremendous potential of the satellite technologies being pioneered by SkyBridge and several others in the satellite industry, including Teledesic and Celestri. As we usher in the new Millennium, these technologies promise to bring about a dramatic advance in the way we view the quality, availability and accessibility of broadband telecommunications infrastructure in the United States and around the world.

I would like to talk to you about how exciting new satellite technologies can provide three major benefits to Americans and to citizens of the world:

- First, the availability of broadband telecommunications to literally everyone;
- Second, the opportunity to create true competition and universal service in local telecommunications; and
- Third, increased services through efficient use of that scarce resource, radio frequency spectrum.

I. Broadband Capacity for All

I start with a simple, virtually unchallengeable proposition: access to telecommunications networks for the transmittal of voice and data communications has brought immense benefits to individuals and businesses. The enhancement of our day-to-day lives, and the enrichment of our social, economic and educational welfare, that have accompanied the recent growth in access to telecommunications services and the proliferation of global communications over the Internet and wide-area corporate networks, are facts to be celebrated by us all.

But even as we celebrate, we must be cognizant that not all is rosy in this picture. The truth of the matter is that our increased access to telecommunications infrastructure and bandwidth has occurred in a discriminatory manner. I am not just talking about economic discrimination between the haves and the have-nots. Certainly, this form of discrimination does exist, and is being addressed. What I am talking about is actually a more prevalent form of discrimination, one that threatens to render meaningless, for millions of Americans, programs such as Universal Service. I am speaking of geographic discrimination.

The terrestrial, wire-based telecommunications network that today serves as the backbone for the lion's share of voice and data communications in the United States either does not extend to numerous geographic areas, or serves those areas inadequately. The reasons why we have unserved and underserved areas in the U.S. and around the globe are complex, but basically come down to numbers. It costs substantially more

money to pass a rural home with a telephone wire than it does to pass an urban home, and in some remote or mountainous regions the cost has sometimes proven prohibitive.

For this reason, the existing telecommunications infrastructure does not reach certain remote, less-populated or mountainous areas of this country. Local Internet service over these copper wires cannot be purchased in countless difficult-to-reach rural areas in the United States as easily and cheaply as it can be bought in New York City or Washington, DC. And advanced communications applications, such as tele-medicine services that can save lives, are simply not possible in numerous unserved areas around the nation.

Fortunately, basic telephone services are available to the vast majority of Americans -- which is not the case for the rest of the world. But almost everywhere, the existing copper-based infrastructure cannot adequately support advanced broadband data communications, one of the fastest growing segments of the telecommunications industry. To be sure, massive improvements are being made to the existing terrestrial infrastructure, such as fiber optic networks, ISDN services and other digital upgrades, which are designed to improve the network for voice communications and to create the bandwidth necessary for the so-called information superhighway. Such improvements, however, have not yet made their way to many small businesses and residents, even in most major metropolitan areas, let alone to the rural or remote communities of our nation.

Given the current pace, cost, and difficulty of these expansions and improvements, the stark reality is that an acceptable grade and quantity of terrestrial, wire-based communications bandwidth may <u>never</u> be available to currently unserved regions --

and in any event, certainly not on a widespread basis. Even in areas that now have some, but inadequate, access to the existing network, the expansion of the available terrestrial bandwidth to accommodate advanced data communications may take decades.

I believe America should ensure that every citizen, wherever he or she is, can have a high-speed on-ramp to the information superhighway, to take advantage of the shift from the Industrial Age to the new Information Age. Among other things, by moving in this direction, we will be ensuring that every citizen can choose where to live and where to work -- without that choice depending on whether he or she will have access to the information superhighway.

The fact that some people have a somewhat peculiar view of what "choice" is all about reminds me of the time, not too long ago, when I was driving through the great state of Texas. I drove by a roadside diner that had a big sign announcing "Texas BBQ + choice of vegetables: $9.95." I drove in, sat down and ordered my steak medium-rare. The waitress then told me that that day's vegetable was creamed corn. When I asked what was the choice, she replied "Do you want 'em or not?"

Now that's not my idea of choice. America should aim to give every citizen a choice of service providers, wherever possible, because choice and diversity is what has made this country strong. Choice in this economy generally means competition (which, by the way, is why there have been some not-too-subtle complaints heard from current players about the arrival of these new satellite technologies); I would suggest, however, that choice is very much in the public interest.

I am here to talk about one solution to this problem that promises to bring about geographic nondiscrimination and to provide everyone with greater choice. Indeed, our company and others like it are risking billions of dollars in capital to realize this promise. The solution we are proposing is very near at hand and will make available to all Americans, in all parts of the country -- in areas urban or remote, flat or mountainous, icy or arid -- equal access to advanced communications service. This giant leap forward is being brought about by satellite technology, such as that being pioneered by my company.

While terrestrial networks discriminate geographically, the sky does not. A copper or fiber optic network has to be painstakingly and expensively installed along every route-mile, over or through every intervening mountain or valley, into every single home, business, school, library or hospital. But a constellation of satellites can provide the very same communications bandwidth to all rural, remote, mountainous, and sparsely populated areas that it provides to New York, San Francisco, and Chicago. Satellites can simultaneously and without much localized effort provide the same grade of service and capacity to Ethiopia, Peru, Siberia and Indonesia as they provide to Britain, Japan and Canada. This communications bandwidth can effortlessly extend to the tops of mountains, the bottom of valleys, the middle of deserts, the center of oceans, to the same extent that it is available in Times Square, Beverly Hills, and Monaco.

With such technology, a farmer in the Midwest will be able to sign up for lightening speed Internet service to enable him to check grain prices, identify potential buyers, sell his wares, and even read the New York Times, in the same way as a banker in